

## ABSTRACT OF THE DISCLOSURE

A waveguide structure and method of fabricating the same, the method comprising forming a first graded layer on a substrate, wherein the first graded layer comprises a first and a second optical material, and a lattice constant adjusting material, wherein the concentration of the second optical material increases with the height of the first graded layer and the concentration of the lattice constant adjusting material varies in proportion to the second optical material; and forming a second graded layer, the second graded layer comprising the first and second optical materials, and a lattice constant adjusting material, wherein the concentration of the second optical material decreases with the height of the second graded layer and the concentration of the lattice constant adjusting material varies in proportion to the second optical material.